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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,674	09/05/2000	Masahide Shima	08917-055001	7335

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EXAMINER
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NGUYEN, CAM N

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 11/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/654,674**

Applicant(s)  
**Shima et al.**

Examiner  
**Cam Nguyen**

Art Unit  
**1754**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08/25/03 (an amendment/response)
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 3-7, and 20-22 is/are pending in the application.
- 4a) Of the above, claim(s) 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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### DETAILED ACTION

1. Applicants' remarks and amendments, filed on August 25, 2003, have been carefully considered. Claims 2 & 8-19 have been canceled. Claims 1 & 3-6 have been amended.

Claims 1, 3-7, & 20-22 are now pending in this application.

2. This application contains claims 20-22 are drawn to an invention non-elected with traverse in Paper No. 9. A complete reply to the final rejection must include cancelation of non-elected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-4, & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent (JP-A-55-145677), "hereinafter Japanese '677" *in view of* Oda et al., "hereinafter Oda", (US Pat. 4,316,965).

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Japanese '677 discloses a non-acidic support having a total content of alumina, silica, and titania of not less than 99 percent by weight (see page 1, ln 15-17), and not allowing Methyl Red with a pKa of +4.8 to show a color change into its acid color (see page 1, ln 20-21). The non-acidic support is having a surface area of from 0.5 to 10 m<sup>2</sup>/g or from 1 to 5 m<sup>2</sup>/g (see page 1, ln 22-24). Japanese '677 also discloses a process of preparing the non-acidic support as described above, by calcining the metal compounds at a calcination temperature of from 1000°C to 2000°C (see page 2, ln 21- page 3, ln 9).

Japanese '677 discloses the claimed ceramic article and its method of production, except for the aluminum, silicon, and titanium contents.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized the aluminum, silicon, and titanium at the amounts as suggested by Oda (see Oda at col. 8, claim 1) in order to achieve an improved support material having the advantage, such as a small coefficient of thermal expansion, a high melting point, and a high mechanical strength (see Oda at col. 1, ln 6-8) in Japanese '677 because Oda teaches 6.5 to 68% by weight of alumina (Al<sub>2</sub>O<sub>3</sub>), 19 to 80% by weight of titanium oxide (TiO<sub>2</sub>), 1 to 20% by weight of silica (SiO<sub>2</sub>) is sufficient to result in a useful ceramic material or catalyst support (see Oda at col. 8, claim 1).

With respect to the alumina content, while Oda teaches a maximum amount of 68% by weight, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have optimized such alumina amounts to the desired amounts, such as the

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claimed amounts from 70.0 to 99.5% by weight, in order to obtain a more effective ceramic material or catalyst support material since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, see In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

5. Claims 5 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent (JP-A-55-145677), "hereinafter Japanese '677" in view of Oda et al., "hereinafter Oda", (US Pat. 4,316,965), as applied to claims 1, 3-4, & 6 above, and further in view of Nagase et al., "hereinafter Nagase", (US Pat. 5,395,812).

Japanese '677 discloses the claimed ceramic article and its method of production, except for the following differences.

Japanese '677 does not disclose  $\alpha$ -alumina and its properties. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized a known  $\alpha$ -alumina carrier, having a secondary particle diameter in the range of from 20 to 200  $\mu\text{m}$  formed of primary  $\alpha$ -alumina particles 0.1 to 10  $\mu\text{m}$  in diameter and a specific surface area in the range of from 0.1 to 10  $\text{m}^2/\text{g}$  as taught by Nagase (see Nagase at col. 4, ln 1-5) to result in an improved support material in Japanese '677 because it is a known and useful catalyst support.

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***Response to Applicants' Arguments***

6. Applicants' amendment/response filed on 08/25/03 has been fully considered, but not deemed persuasive in view of the new ground of rejection(s) above and the following reasons.

Applicants urged that the Japanese reference JP '677 discloses a non-acidic support material; whereas, applicants claimed invention is an acidic support material. This is noted, but not found persuasive. It is noted in applicants' amended claim 1 recites "when the ceramic article is exposed to a methyl red indicator of  $pK_a+4.8$ , the methyl red indicator changes color to its acid color". It is considered the claimed ceramic article of applicants does not require that it must be exposed to methyl red indicator, and when it is actually exposed to the methyl red indicator, it would not change the structure of the ceramic article and the aluminum, silicon, and titanium contents as recited in claim 1.

It is considered the support material of the JP '677 is the same as the support material of applicants.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Conclusion***

8. Claims 1, 3-7, & 20-22 are pending. Claims 1 & 3-7 are rejected. Claims 20-22 remain withdrawn due to non-elected (or distinct) invention. No claims are allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The examiner can normally be reached on M-F from 8:30 am. to 6:00 pm, with alternative Monday off.


The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 (before finals) and (703) 872-9311 (after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Cam Nguyen

Primary Examiner

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Nguyen/cnn   
October 30, 2003